A NEW SPECIES OF *ANISOCENTROPUS* (TRICHOPTERA: CALAMOCERATIDAE) FROM SRI LANKA[1]

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ABSTRACT: *Anisocentropus atropurpureus* from the island of Sri Lanka is described and the male genitalia figured. It is closely related to *A. annulicornis* differing primarily in its purplish-black wings and orange body, and lowland distribution.

The trichopterous fauna of Sri Lanka (earlier Ceylon, Taprobane, or Serendib) has been relatively well studied, with the last and most complete study by Schmid (1958). In this he described two new species in the family Calamoceratidae: *Anisocentropus ittikalama* and *Ganonema elyakatuwa* and listed another six species from the literature: *A. decipiens* (Ulmer 1915), *A. brevipennis* (Ulmer 1915), *A. annulicornis* (Hagen 1858), *A. immunis* McLachlan (1863), *G. pallicorne* McLachlan (1866), and *G. falcata* (Banks 1913). In the most recent study on Asian calamoceratids, Malicky (1994) reduced this number of species to three: *A. ittikalama, A. annulicornis*, and *G. falcata*. He synonymized (correctly) *A. decipiens* with *A. annulicornis*, *G. elyakatuwa* with *G. falcata* and discounted the records of *A. brevipennis, A. immunis*, and *G. pallicorne* as clearly misidentifications because the types of all these species are from Indonesia. It seems quite probable that the records of *A. brevipennis* and *A. immunis* are misidentifications of *A. ittikalama*. If the *Ganonema* is correct generically then it probably pertains to *G. falcata*. In addition to the three species recognized above, Kimmins (1963) described *Nietnerella hageni* from Ceylon but was unable to decide if it belonged in the Leptoceridae, Calamoceratidae or Odontoceridae. It was left in the Leptoceridae, and, although its correct placement is unsettled, it seems unlikely to be a calamoceratid.

The Smithsonian Ceylon Insect Project in Sri Lanka (material in the National Museum of Natural History, Smithsonian Institution = NMNH) captured many specimens of *A. ittikalama* and *G. falcata*, and single specimens of *A. annulicornis* and *N. hageni*. However, five specimens of a totally differently appearing species of *Anisocentropus* were also taken. The forewings are fuscous with purple reflections and the body mostly orange, a coloration quite unlike any other insular species. However, when the genitalia were cleared and compared with its congeners, there appeared to be no significant differ-

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ence between these structures in the new species and *A. annulicornis*. Further study of the whole insect has convinced me that these do represent two species and the new one is described below.

Anisocentropus atropurpureus, NEW SPECIES

Figures 1-5

This species is easily distinguished by sight from the other Sri Lankan species of *Anisocentropus*. Its forewings are fuscous with purpurescent reflections and the body is orange. Its insular congeners are brown, either pale or mottled darker brown with broadly triangular forewing, while *Ganonema* is fuscescent with elongate, falcate forewings. Considering the male genitalia, this and *A. annulicornis* are clearly sibling species, the differences in these structures being minimal: the basodorsal "horns" of the tenth tergum being proportionately broader and the tip of this segment being more strongly decurved in *A. atropurpureus*. However, with only a single example of *A. annulicornis* for comparison one has no way to assess possible variation in these structures. The size, appearance and distribution of the two species offers obvious differences. *A. annulicornis* is slightly larger, the forewing length (male) being 17 mm, as opposed to 10.5-12 mm in *A. atropurpureus*. The coloration is very different in the two, *A. annulicornis* being light brown, and the body pale yellowy brown. In *A. atropurpureus* the wings are fuscous with purplish reflections, the head and thorax are orange, with the vertex mostly fuscous. In addition, the forewings of both sexes have a transverse, dense band of black hair at about a third of the distance from the base to apex of the wing and in the costal cell for the basal half; this band contrasts strongly with the nearly bare membrane on each side of it. *A. annulicornis* is a high elevation species: the type is from Rambodde at "3500 bis 4000 Fuss über dem Meere" (1065-1220 m), its synonym, *A. decipiens*, is from Pattipola "6500-7500 Fufs" (1980-2285 m), the NMNH specimen from Horton Plains at 6600' (2010 m). The examples of *A. atropurpureus* are from, generally, much lower elevations: 490-530 m (Sinharaja), 400 feet (122 m, Kanneliya), and Enselwatte ca 900 m.

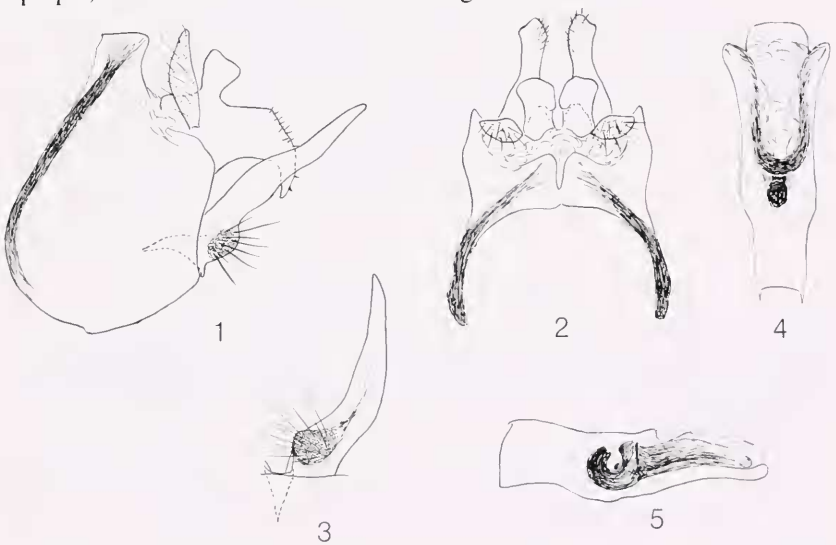
MALE.-Length of forewing 12 mm. Color, purply-fuscous and orange: head orange frontally, vertex fuscous shading to orange posteriad, maxillary palpi fuscous, covered with dense, fuscous hair; scape and pedicel fuscous, flagellar segments fuscous with spot of white hair apicodorsally on each segment; thorax orange, legs orange with tibiae and tarsi fuscous with fuscous hair, hind tibia with fringe of long, silky, fuscous hair; abdomen dark, discolored; forewing fuscous with purply reflections, with transverse, dense band of fuscous setae at third of distance from base to apex, basad and apicad to which membrane glabrous and shining, costal cell from near base to beyond midlength densely packed with fuscous setae, hind wing with rows of sparse silky hair on veins Cu_2 and 1, 2, and 3A; with a well developed hair pencil in anal angle composed of grey, long, silky hair. Spurs 2, 4, 3; outer spurs much shorter than inner. No modification of abdominal terga. Genitalia (Figs. 1, 2): Ninth segment rounded anteroventrally; dorsum raised and narrowly cleft apicomesally. Cercus elongate oval, erect. Tenth tergum with

basodorsal lobe about as long as high, slightly enlarged apicad, lateral plate elongate, broad basally, with apex sharply angled ventrad. Inferior appendage long, slender, with an enlarged basal knob bearing enlarged setae (Fig. 3). Phallus elongate, ventral margin slightly sinuate; internally with a curled, tubular, central lobe giving rise to elongate, apicolateral sclerites (Fig. 5), lyre-shaped in dorsal aspect (Fig. 4); apicoventral plate thin in lateral aspect, apex broadly rounded in dorsal aspect.

FEMALE.-Length of forewing, 10.5-11 mm. Color and wing vestiture as in male; lacking hair fringe on hind tibia and hair pencil in hind wing. Spurs 2, 4, 3.

MATERIAL EXAMINED.-Holotype, male: Sri Lanka, Mata[ra District], Enselwatte, 25 May 1975, S.L. Wood & J.L. Petty. NMNH. Paratypes: Rat[napura District], Sinharaja Jungle, 3 mi [4.8 km] S Weddagala, 490-530 m, 22-23 September 1977, K.V. Krombein, P.B. Karunaratne, T. Wijesinhe, M. Jayaweera, taken in Malaise trap, 1♂. Gal[le District], Kanneliya, 22-23 May 1975, S.L. Wood & J.L. Petty, 1♂; Kanneliya Jungle, 11-16 January 1975, K.V. Krombein, P.B. Karunaratne, P. Fernando, N.V.T.A. Weragoda, 1♀; Udugama, Kanneliya Jungle, 400 feet [112 m], 6-12 October 1973, K.V. Krombein, P.B. Karunaratne, P. Fernando, J. Ferdinando, at black light, 1♀. Holotype and 1♂, 1♀ paratypes in NMNH; 1♂, 1♀ paratypes in National Museum, Colombo.

ETYMOLOGY.-An adjective, from the Latin, ater-black and purpura-purple, in reference to the distinctive wing color.



Figures 1-5. *Anisocentropus atropurpureus* n. sp., male genitalia. 1, lateral; 2, dorsal; 3 inferior appendage, posteroventral; 4, phallus, dorsal; 5, phallus, lateral.

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EMBIA, CONTRIBUTIONS TO THE BIOSYSTEMATICS OF THE INSECT ORDER EMBIIDINA, PARTS 1 AND 2. E.S. Ross. 2000. California Academy of Sciences, San Francisco, CA. $8^1/_2$ x 11 format. 36 pp. Paper. $18.60 incl. shipping.

In two parts. Part 1: Origin, Relationships and Integumental Anatomy of the Insect Order Embiidina. Part 2: A Review of the Biology of Embiidina. EMBIA is a new publication intended to serve as the outlet for the author's long-shelved manuscripts on Embiidina. Very well illustrated.

GROUND BEETLES AND WRINKLED BARK BEETLES OF SOUTH CAROLINA. Janet C. Ciegler. 2000. Clemson University, Clemson, SC. $8^1/_2$ x 11 format. 149 pp. Paper.

Adults of 102 genera and 49 species and subspecies of Carabidae, including Cicindelini, that have been reported from or are likely to occur in South Carolina are discussed, plus two genera and four species of Rhysodidae. Keys to genera and to species, diagnostic diagrams to aid in keying; a description of each species; and data on range, season, and collection within the state are included.